

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-15 (canceled)

Claim 16 (currently amended): A first cache device for storing data received through a network as cached data and for retrieving the cached data in response to a data request from a terminal to send the cached data to the terminal, the first cache device comprising:

a first data area for storing data;

a second data area for storing a cache group table including group configuration information regarding a cache group including first data associated with the first cache device, and second data associated with one or more additional~~other~~ cache devices, wherein the additional cache devices are connected to the same network as the first cache device and the additional cache devices are members of the cache group, and including identifying data associated with content data being controlled by the cache group ~~collaborative content control being carried out for the cache group;~~ and

a controller for determining which data blocks are in a deletion pending status, the data blocks being data stored in the first cache device, the data blocks being associated with the content data being controlled by the cache group~~out of data blocks including in content based on the information included in the cache group table,~~ and for controlling ~~the a status of the~~ data blocks in the deletion pending status according to a deletion pending list including entries having information corresponding to the data blocks in the deletion pending status.

Claim 17 (currently amended): A cache device as claimed in claim 16, wherein:

the cache group table includes an identifier of content that is collaboratively controlled by the cache group, a number N of cache devices of the cache group, and group member numbers m assigned to respective cache devices;

the controller determines which data blocks are in a deletion pending status, the data blocks being stored in the cache device, out of the data blocks composing the content, which is collaboratively controlled; and

the controller carries out a ~~process~~calculation based on a block offset number C serving as offset information, of a data block subjected to the determination, from a leading data block of the content to which the data block belongs:

$C \bmod N$ is calculated;

$V = N$ when $C \bmod N = 0$, and

$V = (C \bmod N)$ when $C \bmod N \neq 0$; and

whether $V = m$ is judged, and

the respective data block is judged to be one of the data blocks in the deletion pending status when $V = m$.

Claim 18 (currently amended): A cache device as claimed in claim 16, wherein:

the controller judges, by exchanging messages between the cache devices, whether the collaborative control by the cache group is applicable to a data block corresponding to an entry to be removed from an LRU list serving as a list for controlling data blocks stored in storage areas; and

the controller generates the cache group table upon judging that the collaborative control is applicable.

Claim 19 (currently amended): A cache device as claimed in claim 16, wherein, for a data block corresponding to an entry to be removed from an LRU list serving as a list for controlling data blocks stored in storage areas, the controller determines which data blocks are in a deletion pending status, the data blocks being data stored in the cache device, from a list of data blocks associated with the content data being controlled by the cache group ~~out of the data blocks included in the content~~ based on the information included in the cache group table, and the controller controls the data block, ~~other than the data blocks in the~~ that is not in the deletion pending status, in a free block list serving as a list for controlling data blocks that can be deleted.

Claim 20 (currently amended): A cache device as claimed in claim 16, wherein the deletion pending list ~~comprises is a plurality of~~ multi-level deletion pending lists where each

~~level corresponding~~ corresponds to a priority, the data blocks being stored in order of the priority, and the controller ~~performs a judgment to determine~~ judges the priority at which each of the data blocks is stored, and registers an entry corresponding to each of the data blocks in one ~~list selected from the level of the multi-level~~ deletion pending lists according to the judgment.

Claim 21 (currently amended): A cache device as claimed in claim 17, wherein when the data request from the terminal is for acquiring a data block contained in the content that is collaboratively controlled by the cache group, the controller judges which cache device of the cache group stores the requested data block and retrieves the data block from the cache device itself or ~~other~~ from the additional cache devices of the cache group according to the judgment.

Claim 22 (currently amended): A cache device as claimed in claim 21, wherein the cache group table includes an identifier of the content that is collaboratively controlled by the cache group, a number N of cache devices of the cache group, and group member numbers m assigned to respective cache devices, and the controller carries out a following ~~process~~ calculation based on a block offset number C serving as offset information, of the requested data block, from the leading data block of the content to which the data block belongs:

$C \bmod N$ is calculated;

$V = N$ when $C \bmod N = 0$, and

$V = (C \bmod N)$ when $C \bmod N \neq 0$; and

$V = m$, and

the data block is retrieved from a cache device having the group member number m that is calculated.

Claim 23 (currently amended): A method for controlling cached data in a cache device for storing data received through a network as the cached data and retrieving the cached data in response to a data request from a terminal to send the cached data to the terminal, the method comprising:

storing data blocks;

determining which data blocks are in a deletion pending status, the data blocks being data stored in the cache device and associated with content data, the content data being controlled by a cache group, wherein a cache group table stores configuration information associated with the

cache group, the cache group including the first cache device and one or more additional cache devices, the additional cache devices being connected to the same network, out of data blocks including content based on group configuration information, stored in a cache group table, regarding a cache group including the cache device and other cache devices connected to the network, including identifying data associated with content data being controlled by the cache group collaborative content control being carried out for the cache group; and

controlling the a status of the data blocks in the deletion pending status according to a deletion pending list including entries having information corresponding to the data blocks in the deletion pending status;

receiving a request for data; and

transmitting the data.

Claim 24 (currently amended): A method for controlling cached data as claimed in claim 23, wherein:

the cache group table includes an identifier of the content that is collaboratively controlled by the cache group, a number N of cache devices of the cache group, and group member numbers m assigned to respective cache devices;

in the step of determining which data blocks are in a deletion pending status, the data blocks in the deletion pending status, the data blocks being stored in the cache device, are determined out of the data blocks including the content, which is collaboratively controlled; and

a process calculation is carried out based on a block offset number C serving as offset information, of a data block subjected to the determination, from a leading data block of the content to which the data block belongs:

$C \bmod N$ is calculated;

$V = N$ when $C \bmod N = 0$, and

$V = (C \bmod N)$ when $C \bmod N \neq 0$; and

whether $V = m$ is judged, and

the respective data block is judged to be one of the data blocks in the deletion pending status when $V = m$.

Claim 25 (currently amended): A method for controlling cached data as claimed in claim 23, further comprising:

judging, by exchanging messages between the cache devices, whether the collaborative control by the cache group is applicable to a data block corresponding to an entry to be removed from an LRU list serving as a list for controlling data blocks stored in storage areas; and
generating the cache group table upon judging that the collaborative control is applicable.

Claim 26 (currently amended): A method for controlling cached data as claimed in claim 23, further comprising:

determining which data blocks are in a deletion pending status, the data blocks being data stored in the cache device, from a list of data blocks associated with the content data being controlled by the cache group~~out of the data blocks included in the content~~ based on the information included in the cache group table for a data block corresponding to an entry to be removed from an LRU list serving as a list for controlling data blocks stored in storage areas; and

controlling the data block, that is not in the other than the data blocks in the deletion pending status~~, that is not in the other than the data blocks in the deletion pending status~~, in a free block list serving as a list for controlling data blocks that can be deleted.

Claim 27 (currently amended): A method for controlling cached data as claimed in claim 23, wherein the deletion pending list ~~comprises is a plurality of multi-level deletion pending lists~~ where each level corresponding corresponds to a priority, the data blocks being stored in order of the priority, and the controller performs a judgment to determine ~~judges~~ the priority at which each of the data blocks is stored, and registers an entry corresponding to each of the data blocks in one list ~~selected from the level of the multi-level deletion pending lists~~ according to the judgment.

Claim 28 (currently amended): A method for controlling cached data as claimed in claim 24, further comprising:

judging which cache device of the cache group stores the requested data block; and
retrieving the data block from the cache device itself or ~~other~~ the additional cache devices of the cache group according to the judgment when the data request from the terminal is for

acquiring a data block contained in the content that is collaboratively controlled by the cache group.

Claim 29 (currently amended): A method for controlling cached data as claimed in claim 28, wherein: the cache group table includes an identifier of the content that is collaboratively controlled by the cache group, the number N of cache devices of the cache group, and group member numbers m assigned to respective cache devices; and

in the step of retrieving the data block, a ~~process~~calculation is carried out based on a block offset number C serving as offset information, of the requested data block, from the leading data block of the content to which the data block belongs:

$C \bmod N$ is calculated;

$V = N$ when $C \bmod N = 0$, and

$V = (C \bmod N)$ when $C \bmod N \neq 0$; and

$V = m$, and

the data block is retrieved from a cache device having the group member number m that is calculated.

Claim 30 (currently amended): A computer program, on a computer readable medium, for controlling cached data in a cache device for storing data received through a network as the cached data and retrieving the cached data in response to a data request from a terminal to send the cached data to the terminal, the computer program comprising:

a step of storing data blocks;

a step of determining which data blocks are in a deletion pending status, the data blocks being stored in the cache device and associated with content data, the content data being controlled by a cache group, wherein a cache group table stores configuration information associated with the cache group, the cache group including the first cache device and one or more additional cache devices, the additional cache devices being connected to the same network, including identifying data associated with content data being controlled by the cache group; collaborative content control being carried out for the cache group; and

a step of controlling ~~the~~ a status of data blocks in the deletion pending status according to a deletion pending list including entries having information corresponding to the data blocks in the deletion pending status;

a step of receiving a request for data; and

a step of transmitting the data.